CONTENTS

SECTION A—VOL. LXXIV

No. 1—July 1971

PAGE

Study of Competitive Reactions by Solvent Extraction : Determination of Stability Constants . . M. Sudersanan and A. K. Sundaram 1

Conjugacy of Magnetic Field Fluctuations in the Period Range 2-24 Hours . . . . . B. N. Bhargava and G. K. Rangarajan 7

Reconstruction of Substance from Shadow. I. Mathematical Theory with Application to Three-Dimensional Radiography and Electron Microscopy . . . . . G. N. Ramachandran 14

On Some Finite Integrals Involving Fox's H-Function . . S. P. Goyal 25

Electron Paramagnetic Resonance of Mn^{2+} in Single Crystals of Cesium Sulphate . . . . A. V. Jagannadham and Putcha Venkateswarlu 34

No. 2—August 1971

Design of a Wien Filter and Measurement of Longitudinal Polarization of Beta Particles . . . S. S. Abhyankar and M. R. Bhiday 53

The Disappearance of Equatorial E, and the Reversal of Electrojet Current . . . . R. G. Rastogi, H. Chandra and S. C. Chakravarty 62

Unsteady Plane Poiseuille Flow Between Two Parallel Plates . . . . . M. C. Gupta and M. C. Goyal 68

Quantum Kinematics of Fermi-Dirac Vacuum-*Plus*-One-Electron Problem . . . . . N. Kumar 79

Hydromagnetic Flow in a Porous Duct . . . T. Govindarajulu 83

Quantum Theoretic Explanation of the Schwarz-Hora Effect . . . . . N. Kumar and K. P. Sinha 91

No. 3—September 1971

PAGE

Nocturnal Absorption of Radio Waves Due to the Ionisation Produced by X-Rays from Sco X-1 and Tau X-1 in the Lower Ionosphere . . . . . S. C. Chakravarty 99

The Structure of Strong Shock Waves Using the Fokker-Planck Model . . K. S. Viswanathan, G. S. Dwarakanath and V. V. Shanbhag 115

Polarography of Europium in Aqueous and Aqueous Methanolic Solutions . . . . V. R. Chandrasekaran and A. K. Sundaram 133

Microwave Solar Radiometer at 2800 MHz . . . . . K. Narayanan and R. V. Bhonsle 142

No. 4—October 1971

Gallacetophenone Oxime as a Reagent for Gravimetric Determination of Copper and Its Separation from Other Elements . . . . . K. Adinarayana Reddy and Y. Krishna Reddy 153

Canonical Forms of Pseudo-Orthogonal Matrices . . . . . G. Abraham, B. M. Arthur and P. Swamidhas 159

On Meijer's G-Function . . . R. S. Dahiya and Bhagat Singh 167

Equal Matrix Languages and Kleene Closure . . . . . Rani Siromoney and Gift Siromoney 172

On Some Integral Properties of Hypergeometric Functions . . . . . V. G. Tikekar 189

Oscillatory Flow of Dipolar Fluids Between Parallel Plates . . . . . K. N. Katyal 195

No. 5—November 1971

Time Structure of the Hadronic Component of Extensive Air showers . . . . . S. C. Tonwar, G. T Murthy and B. V. Sreekantan 203

Raman Spectrum of Cs_2SO_4 Using Ar^+ Laser Excitation . . . . . Putcha Venkateswarlu and Herbert P. Broida 230

Molecular Force Fields for Some Anions and Molecules of MX_6 Type (X = Cl, Br) . . . . . S. N. Rai, S. N. Thakur and D. K. Rai 243

No. 6—December 1971

PAGE

Stability of Non-Rotationally Symmetric Disturbances for Inviscid Flow Between Rotating Cylinders in the Presence of an Axial Magnetic Field . . . . . Ram Shankar Pathak 255

Synthesis of Some Chromono (7, 8) Oxazoles and Their Antibacterial Activity . . . . . Y. D. Reddy and V. V. Somayajulu 265

Potential Functions for Hydrogen Bond Interactions. III. Empirical Potential Function for the Peptide N–H...O=C Hydrogen Bond . . . G. N. Ramachandran, R. Chandrasekharan and R. Chidambaram 270

Potential Functions for Hydrogen Bond Interactions. IV. Minimum Energy Conformation of the α-Helical Structure of Poly-L-Alanine . . . G. N. Ramachandran, R. Chandrasekharan and R. Chidambaram 284

A Note on Certain Bilinear and Bilateral Generating Relations for the Laguerre Polynomial . . . . . H. M. Srivastava 299